Campaign Analytics

Campaign analytics involves analyzing marketing campaign data to evaluate their effectiveness and improve future campaigns. The goal is to derive insights that can drive better decision-making, targeting, and customer engagement strategies.

Uplift Modeling

What is Uplift Modeling?
Uplift modeling is a technique used to measure the incremental impact of a marketing campaign. Instead of just predicting who will respond to a campaign, uplift modeling predicts how much the campaign will change a person's behavior.

How it Works:

1. **Groups:** Split your customers into two groups: one that receives the campaign (treatment group) and one that doesn't (control group).

2. **Measure Response:** Track how many people from each group respond (e.g., make a purchase, sign up for a service).

3. **Calculate Uplift:** The difference in response rates between the two groups shows the campaign's true impact.

Example in Campaign Analytics:

- **Targeting:** Suppose you're running an email campaign to get people to sign up for a new bank account. Uplift modeling can help you figure out which customers are likely to sign up because of the email, not just those who would have signed up anyway. This way, you only target those who are truly influenced by the campaign, saving resources and improving efficiency.

Attribution Modeling

What is Attribution Modeling?
Attribution modeling is used to determine which marketing channels (like emails, social media, or ads) contribute most to conversions (like sales or sign-ups). It helps you understand the customer journey and the impact of each interaction.

How it Works:

1. **Track Interactions:** Monitor all the ways customers interact with your marketing (clicking ads, opening emails, visiting the website).

2. **Assign Credit:** Use different models to assign credit for a conversion to these interactions.

Common Models:

- **Last-Click:** All credit goes to the last interaction before the conversion.

- **First-Click:** All credit goes to the first interaction.

- **Linear:** Credit is spread equally across all interactions.

- **Time-Decay:** More credit is given to interactions closer to the time of conversion.

Example in Campaign Analytics:

- **Channel Optimization:** If you find that social media ads are leading to a lot of conversions through last-click attribution, you might invest more in social media advertising. Conversely, if your email campaigns are driving early interest (first-click), you might focus on enhancing those emails.

Customer Lifetime Value (CLTV) Analysis

What is CLTV Analysis?
Customer Lifetime Value (CLTV) is a measure of the total revenue a customer is expected to generate over the entire duration of their relationship with your business.

How it Works:

1. **Calculate Metrics:**

   - **Average Purchase Value:** How much does a customer spend per purchase?

   - **Purchase Frequency:** How often do they buy?

   - **Customer Lifespan:** How long do they remain a customer?

   - **Profit Margin:** What's the profit margin on their purchases?

2. **CLTV Formula:** CLTV=
   (Average Purchase Value)×(Purchase Frequency)×(Customer Lifespan)×(Profit Margin)

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Example in Campaign Analytics:

- **Customer Segmentation:** If you identify that certain customers have a high CLTV, you can prioritize them for special offers and loyalty programs to keep them engaged. Conversely, if some customers have a low CLTV, you might reconsider how much you spend to acquire or retain them.

Bringing It All Together in Campaign Analytics

- **Acquisition Phase:** Use CLTV analysis to focus on acquiring high-value customers. Apply uplift modeling to identify which prospects will be most influenced by your campaigns. Use attribution modeling to determine which channels are most effective for acquisition.

- **Engagement Phase:** Utilize uplift modeling to determine which events or actions (like promotions) will increase engagement. Use attribution modeling to understand which

interactions (e.g., emails, ads) are most effective in keeping customers engaged. Apply CLTV analysis to focus on engaging those who will provide the most long-term value.

- **Retention Phase:** Use CLTV analysis to prioritize retention efforts on high-value customers. Apply uplift modeling to find out which at-risk customers are most likely to stay if targeted with specific campaigns. Utilize attribution modeling to see which touchpoints are crucial in maintaining customer loyalty and preventing churn.

By leveraging these techniques, you can make more informed decisions, optimize your marketing spend, and ultimately drive better results for your campaigns.

Banking Specific

Acquisition

Acquisition is the phase where the bank focuses on attracting new customers. The goal is to convert potential prospects into active account holders.

Opportunities in Campaign Analytics:

- **Segmentation and Targeting:** Identify and target high-potential prospects through segmentation based on demographics, behavior, and other relevant data.

ML and Analytics Opportunities:

- **Predictive Modelling:** Build models to predict which prospects are most likely to open an account based on historical data and behavior patterns.

- **Look-alike Modelling:** Identify potential new customers who resemble existing high-value customers.

- **Churn Prediction:** Predict which newly acquired customers are at risk of early churn and proactively engage them with targeted interventions.

Engagement

Engagement focuses on nurturing the relationship with the customer by encouraging them to actively use the bank's products and services.

- **Cross-Selling and Upselling:** Identify opportunities to promote additional products (e.g., loans, credit cards) to existing customers based on their usage patterns and needs.

- **Behavioral Analysis:** Monitor customer interactions and transactions to identify engagement levels and tailor communication strategies accordingly.

- **Event-Triggered Campaigns:** Launch campaigns triggered by specific customer actions or milestones (e.g., first deposit, account anniversary).

ML and Analytics Opportunities:

- **Recommendation Systems:** Develop recommendation engines to suggest relevant products and services to customers based on their transaction history and preferences.

- **Sentiment Analysis:** Analyze customer feedback and sentiment from various channels (e.g., social media, customer service interactions) to understand and address their concerns.

Retention

Retention is the phase where the bank aims to keep customers loyal and reduce churn. The focus is on maintaining a long-term relationship with the customer.

ML and Analytics Opportunities:

- **Churn Prediction:** Use predictive analytics to identify customers who are likely to churn and intervene with personalized retention strategies.

- **Customer Lifetime Value (CLTV) Analysis:** Calculate and track CLTV to focus retention efforts on the most valuable customers.

- **Engagement Scoring:** Develop scoring models to assess customer engagement levels and identify those who need more attention.

1. **Acquisition:**
   - Segment → Target → Convert → Predict Early Churn
2. **Engagement:**
   - Analyze Behavior → Cross-Sell/Upsell → Recommend Products → Analyze Sentiment
3. **Retention:**
   - Predict Churn → Analyze CLTV → Personalize Retention Strategies

1. **Feedback Loop:**

   - Continuous Data Integration → Model Refinement → Enhanced Campaigns

Integrated Flow

1. **Acquisition:**

   - **Segmentation and Targeting:** Use K-Means Clustering to segment potential customers based on demographics and behavior.

   - **Look-alike Modelling:** Apply Logistic Regression to identify high-potential prospects similar to existing high-value customers.

2. **Engagement:**

   - **Cross-Selling and Upselling:** Use Decision Trees to identify opportunities for promoting additional products to existing customers.

   - **Recommendation Systems:** Implement Collaborative Filtering to provide personalized product recommendations based on transaction history.

3. **Retention:**

   - **Churn Prediction:** Apply Gradient Boosting to predict the likelihood of customer churn and intervene proactively.

   - **CLTV Analysis:** Use Linear Regression to calculate and track customer lifetime value, focusing retention efforts on high-value customers.

Continuous Improvement

- **Feedback Loop:** Continuously integrate data from each phase to refine models and improve predictions.

- **Data Integration:** Ensure seamless data transition between phases to enhance model accuracy and campaign effectiveness.

This streamlined approach ensures that the most important and practically feasible methods are applied effectively, optimizing the banking campaign analytics process.

Stages :

Segmentation and Targeting in Banking

[Look-alike Modelling in Banking](#)

[Uplift Modelling in Banking](#)

[Choosing between uplift modeling and look-alike](#)

[Engagement Stage: Cross-Selling and Upselling](#)

Uplift Modelling for Debit Card Activation Campaign

An application for causal inference in banking

 https://medium.com/@calvinnguyen8k/uplift-modelling-for-debit-card-activation-campaign-1b8fc5bd4b28

Bank Marketing Campaign Analysis

Understanding the factors that drive customer behavior is crucial for successful campaign strategies.

 https://medium.com/@nazlicanto/bank-marketing-campaign-analysis-5b2dacdb2242